

# ***DOCUMENTING OBSERVATIONS & CORROBORATIVE INFORMATION***



# Documented Observations

- Photodocumentation should be required for all site-specific determination submittals.
- Accompanied by recent/seasonal climate data
- Photos should have date stamp/certification
- Minimum 2 photos clearly showing channel
- Upstream/downstream, 200 ft intervals
- Identifiable landmarks that can be verified
- Mark photo locations on map

# Documented Observations

- Photodocumentation alone may be acceptable for use as “reliable site-specific evaluation (9VAC 10-20-105) or as basis of definitive mapping (9VAC 10-20-80D)
  - corroborative climate data provided

# Documented Observations

- Stream likely to be intermittent or ephemeral if:
  - Stream has no flow
  - Normal Rainfall Year/Month
  - Recent rainfall





# Documented Observations

- Stream likely perennial if:
  - Stream has flow
  - Drought conditions exist
  - No recent rainfall







7-05-03





6-18-03









# Corroborative Information

- Determinations should always be made in context of recent/seasonal weather conditions
- Preceding days, M-T-D, Y-T-D
- Deviations >20% normal (30-yr mean) precipitations are noteworthy (wet/dry)
- Look closely at biological indicators (fish, crayfish, amphibians, mussels/clams, large multi-year tadpoles/benthics)
- Anecdotal information (use with caution!)



- Dulles Airport  
<http://weather.noaa.gov/weather/current/KIAD.html>
- Reagan Nat'l Airport  
<http://weather.noaa.gov/weather/current/KDCA.html>
- VA State Climatology Office <http://climate.virginia.edu/>
- VA DEQ Drought Monitor  
<http://www.deq.state.va.us/info/drought.html>
- US Drought Monitor  
<http://www.drought.unl.edu/dm/index.html>
- Nat'l Weather Service Wakefield  
<http://www.erh.noaa.gov/er/akq/>
- Local Newspapers

# Drought Indices

- **Palmer Drought Severity Index**
  - Long-term cumulative, meteorological conditions
- **Palmer Z Index**
  - Short-term, monthly scale
- **Palmer Hydrological Drought Index**
  - Long-term cumulative conditions, more accurately reflects groundwater conditions



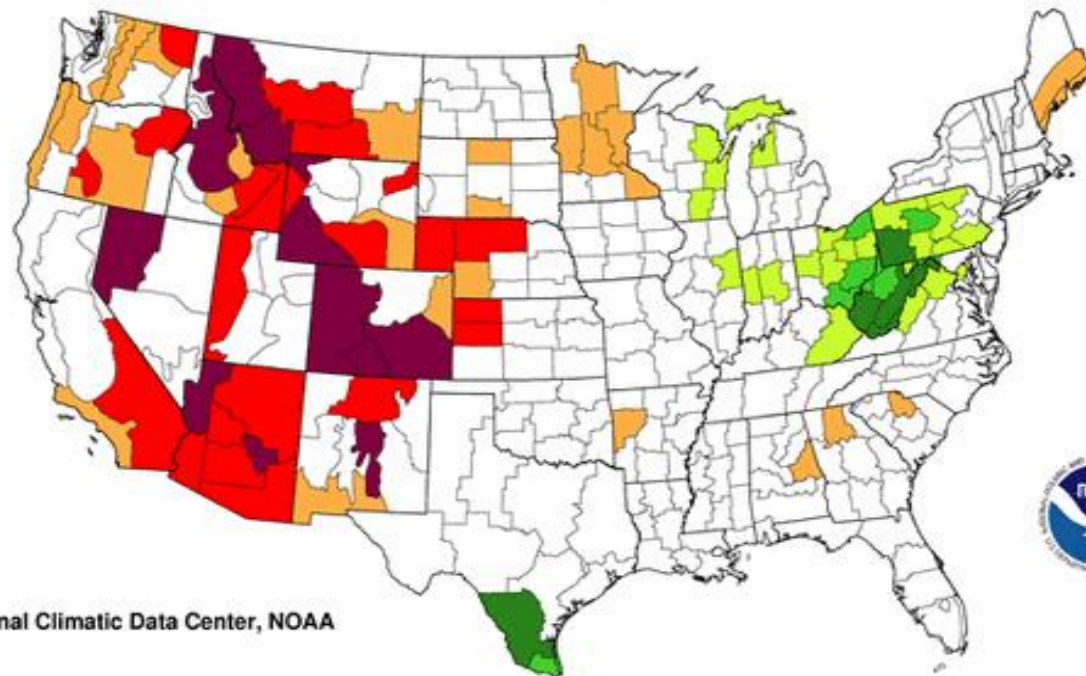
# Palmer (PDSI) Classifications

- |                 |                       |
|-----------------|-----------------------|
| ■ 4.0 or more   | - Extremely wet       |
| ■ 3.0 to 3.99   | - Very wet            |
| ■ 2.0 to 2.99   | - Moderately wet      |
| ■ 1.0 to 1.99   | - Slightly wet        |
| ■ 0.5 to 0.99   | - Incipient wet spell |
| ■ 0.49 to -0.49 | - Near normal         |
| ■ -0.5 to -0.99 | - Incipient dry spell |
| ■ -1.0 to -1.99 | - Mild drought        |
| ■ -2.0 to -2.99 | - Moderate drought    |
| ■ -3.0 to -3.99 | - Severe drought      |
| ■ -4.0 or less  | - Extreme drought     |

# Palmer Drought Severity Index (PDSI, PDI)

Palmer Drought Index  
Long-Term (Meteorological) Conditions

March 2004



National Climatic Data Center, NOAA

extreme  
drought  
-4.00  
and  
below

severe  
drought  
-3.00  
to  
-3.99

moderate  
drought  
-2.00  
to  
-2.99

mid-  
range  
-1.99  
to  
+1.99

moderately  
moist  
+2.00  
to  
+2.99

very  
moist  
+3.00  
to  
+3.99

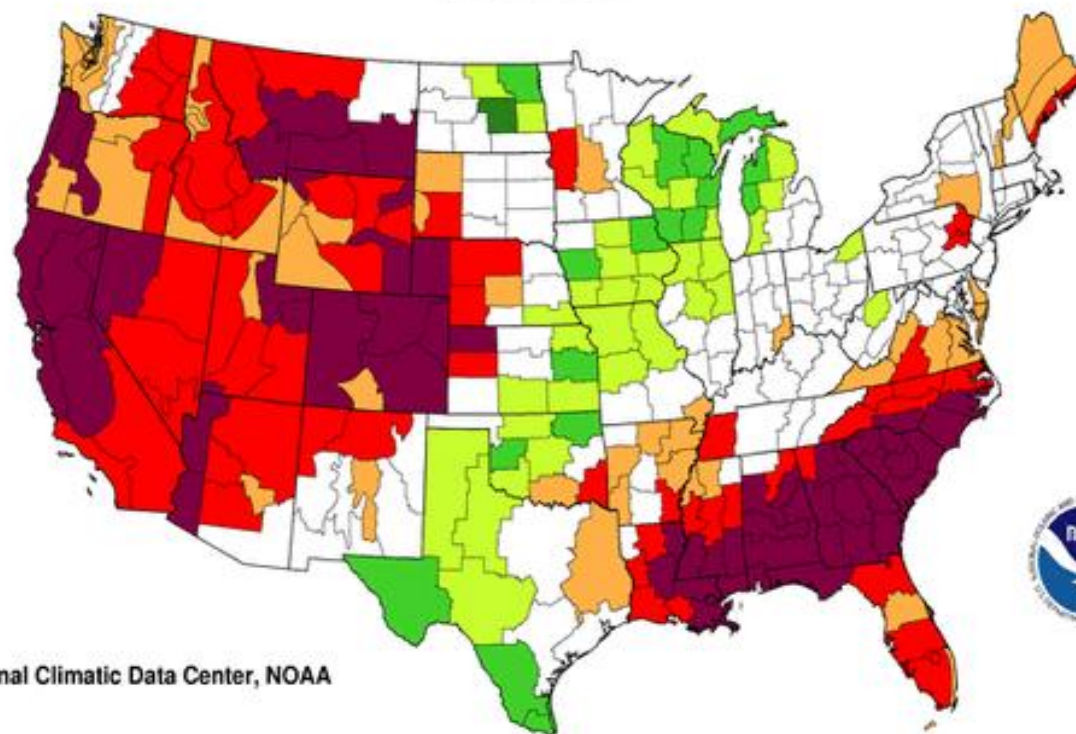
extremely  
moist  
+4.00  
and  
above



# Palmer Z Index

## Palmer Z Index Short-Term Conditions

March 2004



National Climatic Data Center, NOAA

extreme  
drought  
  
-2.75  
and  
below


severe  
drought  
  
-2.00  
to  
-2.74

moderate  
drought  
  
-1.25  
to  
-1.99

mid-  
range  
  
-1.24  
to  
+0.99

moderately  
moist  
  
+1.00  
to  
+2.49

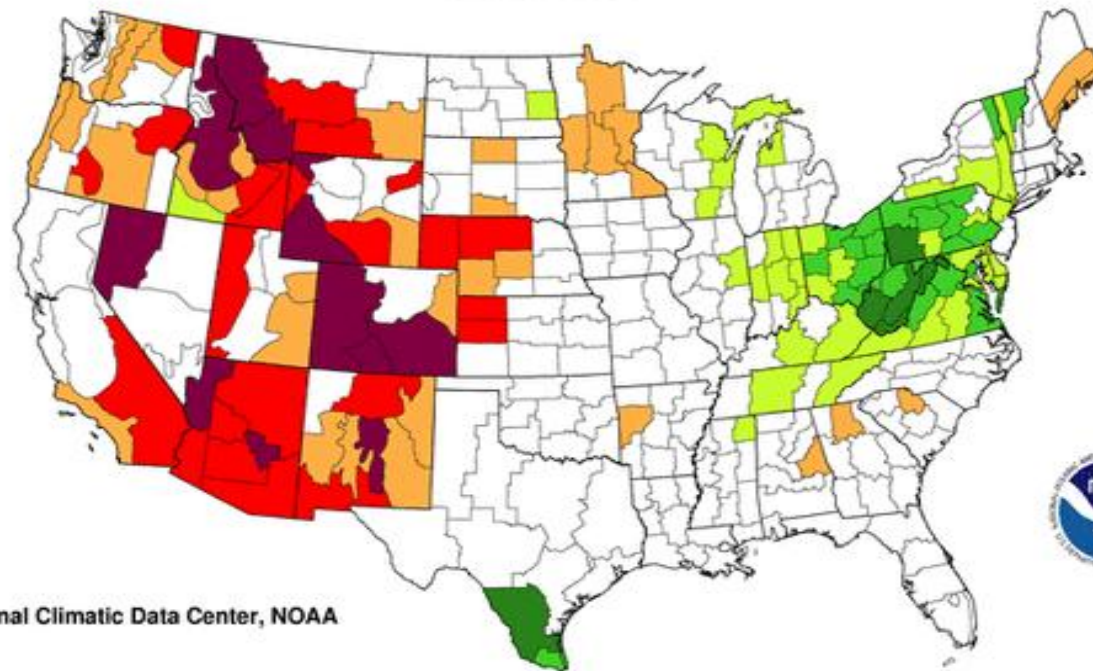
very  
moist  
  
+2.50  
to  
+3.49

extremely  
moist  
  
+3.50  
and  
above

# Palmer Hydrological Drought Index

## Palmer Hydrological Drought Index Long-Term (Hydrological) Conditions

March 2004



National Climatic Data Center, NOAA

extreme  
drought  
-4.00  
and  
below

severe  
drought  
-3.00  
to  
-3.99

moderate  
drought  
-2.00  
to  
-2.99

mid-  
range  
-1.99  
to  
+1.99

moderately  
moist  
+2.00  
to  
+2.99

very  
moist  
+3.00  
to  
+3.99

extremely  
moist  
+4.00  
and  
above



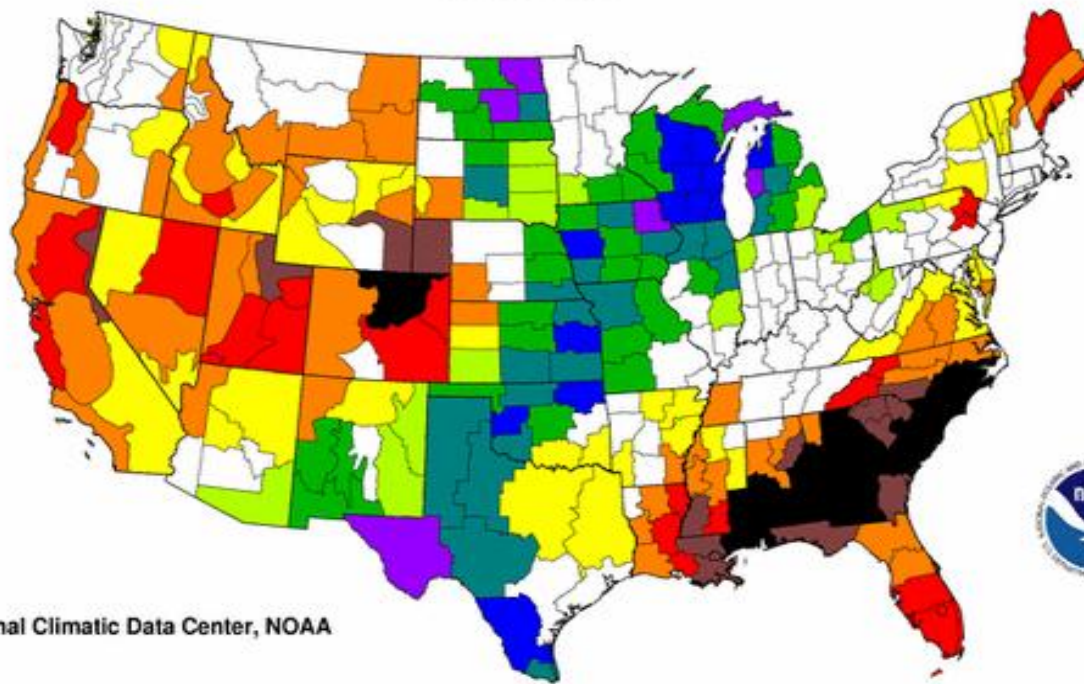
# Other Drought Indices

- **Standardized Precipitation Index**
  - considers only precipitation
- **Crop Moisture Index**
  - short-term, weekly scale used to assess agricultural impacts

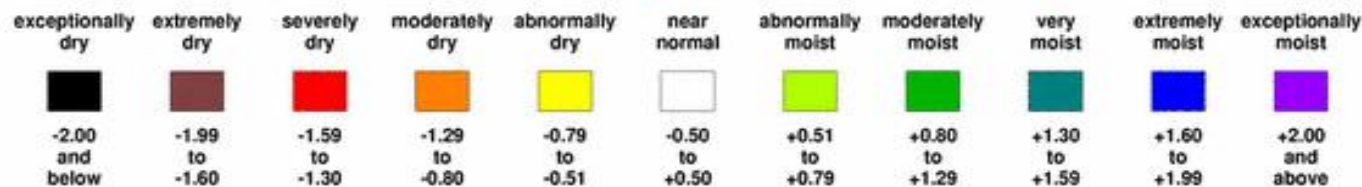
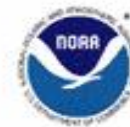
# Standardized Precipitation Index

## Standardized Precipitation Index One Month

March 2004



National Climatic Data Center, NOAA





# QUESTIONS????

- 1-800-CHESBAY
- 804/371-7501
- 101 N. 14<sup>th</sup> Street, James Monroe Building,  
17<sup>th</sup> Floor, Richmond, VA 23219
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